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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,417	02/03/2005	Kaisa Putkisto	METSO-23	6312

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EXAMINER	
PARKER, FREDERICK JOHN	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/507,417	PUTKISTO ET AL.	
	Examiner	Art Unit	
	Frederick J. Parker	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 5-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 5-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 9/13/04;5/5/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title does not reflect the subject mater of the claims.

3. The disclosure is objected to because of the following informalities: the description on page 9 lacks technical correctness and coherency with subsequent descriptions, the figures, and original claims. That is, in 0019,0020, and 0021, are described precharged particles entering a final field formed by a grounding electrode or electrode of opposite sign. One of ordinary skill would readily recognize that a grounded electrode would attract charged particles, thus removing them from the coating stream. An oppositely charged electrode would reduce or remove (neutralize) charge which would be detrimental to electrostatic attraction of the particles to the substrate. Indeed, there appears to be a specific spatial relationship (see figures) of electrodes which is omitted from this description, thereby making it technically confusing. In [0025], lines 4-5 are confusing; what does "The charging electrode is located farther from the other electrodes 2..." mean in context? Further confusing is that lines 3-4 calls 1 a charging electrode which precharges powder (line 4), but then on lines 4-5 also lists 1 as a corona electrode which forms part of the final electric field. For sake of examination the Examiner will interpret these

embodiments as (1) a precharge unit 1 which dispenses powder which is effected by a final electric field formed by electrode/s 2 away from the dispenser, and a ground electrode is located behind the substrate to permit attraction of charged particles to the substrate to be coated, and (2) a precharge unit comprising 5-8 which dispenses powder which is effected by a final electric field formed by electrode/s 2 away from the dispenser, and a ground electrode is located behind the substrate to permit attraction of charged particles to the substrate to be coated. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 5,8,11,14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 5 & 11, the specifically cited spatial relationship between 2nd and 3rd electrode from the substrate being less than the 1st distance is not present in the original filing or PCT. In claims 8 & 14, the specifically cited spatial relationship between 1st and 2nd electrode from the substrate being less than the 1st distance is not present in the original filing or PCT. The limitations are thus deemed new matter. The Examiner holds that the figures are not to scale

and therefore cannot be used to support the limitation. No statement of where support is found was provided by Applicants for the amended claims.

6. Claims 5,8,11,14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of the nozzle being positioned between a corona electrode upstream of the nozzle and a corona electrode downstream of the nozzle is not present in the original filing or PCT. Figures 1 &2, and at least [0003] illustrate the spatial relationships between the nozzle and other electrodes outside the nozzle. No statement of where support is found was provided by Applicants for the amended claims.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 5,8,11,14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 5 and 11 are vague and indefinite because it is unclear how particles can be pre-charged by moving corona charged particles past a charging electrode of opposite potential without neutralizing or at least reducing the charge on the particles, which is detrimental to electrostatic attraction; it is unclear if the "electrode" of lines 4 and 6 are the same or different

- Claims 5,8,11,14 are vague and indefinite because the relationship between three of what appears to be at least four electrodes is unclear (position of the backing electrode behind the web is clear).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 5-7,11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher US 3521558.

Fisher teaches to electrostatically apply particulates to dielectric substrates (encompassing paper or board which are dielectric), one embodiment comprising planar substrate 21 with a conforming backing plate electrode 17,36 of positive charge. Powder coating particles are entrained in air and launching charge electrodes 33 of negative charge precharge particles prior to their leaving the dispenser through apertures 28 toward oppositely charged substrate 21.

Charged mask 18 through which the charged powder stream travels between the dispenser and substrate is an electrode by virtue of its applied charge. The series of electrodes collectively form a field which is maintained "in any suitable manner" to maintain "suitable voltage potentials or differentials" (col. 4, 8-29). It would have been apparent that the electrodes 18,33 are corona type electrodes given their description even if not so named by the reference.

This, in accordance with the reasonable interpretation of the claims, powder is pre-charged and then dispensed, and flowed through a second electrode (charged mask) located between the launching electrode and substrate with backing electrode 17,36, the latter being opposite in charge to that of the launching electrode of powder feed means and the mask/ electrode.

Spacing of electrodes relative to the substrate would have been an obvious variation which would have been determined by routine experimentation, particularly given the teachings of col. 4.

While the grounding electrode is not stated to be a rotating roll, the shape of substrates on col. 1, 36-43 includes curvilinear surfaces, flat sheets, etc so that modification of the backing electrode to be conformable in shape to the substrate to optimize electrostatic effects would have been an obvious variation within the purview of one of ordinary skill.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the electrostatic powder coating of dielectric substrates (e.g. paper, board) using plural electrodes as taught by Fisher and further optimizing spacing between electrodes and substrate to produce patterned powder coatings of uniformity and fidelity.

12. Claims 8-10,14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher US 3521558 in view of Haller US 5344082.

Fisher is cited for the same reasons previously discussed, which are incorporated herein. Pre-charging using tribo-charging by a transfer pipe is not cited.

Haller teaches applying tribo-electrically charged powder to a substrate, using a device comprising a diffuser which forms a powder-entrained gas stream which travels downstream through a charging portion, and then the charged powder is dispensed through an outlet. The charging portion provides a tortuous flow path with undulating/ wavy surfaces on an electrically insulating material (same as "transfer pipe") to enhance powder contact and imparting of a tribo-electric charge to the powder. The charging path is grounded to bleed off excessive charge. The charged particles are applied to substrates and heated to fuse/ coalesce the coating.

Since the "Description of the Prior Art" equates tribo and corona charging of particles, it would have been obvious to substitute the charging means of Fisher with that of Haller, with the further benefit of preventing the well-known and detrimental Faraday Cage effect on uneven substrate surfaces during coating.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electrostatic powder coating of Fisher by substituting the charging means with the tribo-charging means of Haller because of the known equivalence of corona and tribo charging, and the further advantage of preventing Faraday cage effects with tribo-charging means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp